

## Comet 1887 a. By W. H. Finlay, M.A.

The tail of this remarkable comet was first seen, so far as I am aware, by a farmer and a fisherman at Blauwberg (near Cape Town), on Tuesday night, January 18; the next evening it was seen at Grahamstown, Fraserburg, &c.; our first view of it at the observatory was on January 22. It presented the appearance of a pale narrow ribbon of light, quite straight, and of nearly uniform brightness throughout its length. There was no head or condensation of any kind visible near the end, the light simply fading away to nothing. The comet was lost in the 6-inch Equatorial long before the end of the light, as visible to the naked eye, was reached. The following rough observations were made by tracing the tail down as far as possible with the finder of the 6-inch and reading the circles of the Equatorial. On January 24 and 27 the circles were also read for the centre of a very slightly more condensed part of the tail, extending over about half a degree. A star near the same position was also observed in a similar manner each evening. The resulting places are:

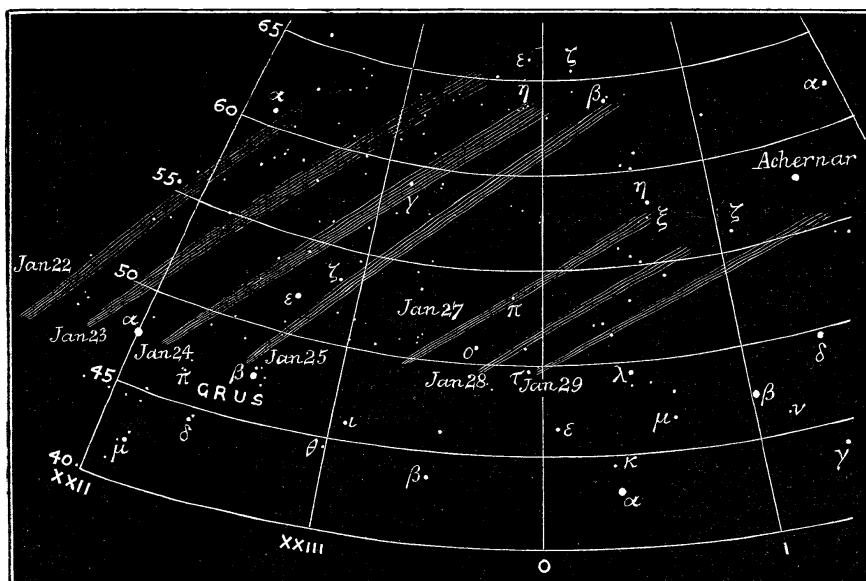
Date.	Cape M.T.	App. R.A.	App. Dec.
	h m	h m s	
Jan. 22	8 50	21 30 0	-45 47 $\frac{1}{2}$
23	8 44	21 47 54	-46 32 $\frac{1}{2}$
24	8 50	22 8 15	-47 35
24*	8 55	22 9 20	-47 54 $\frac{1}{2}$
25	9 4	22 30 44	-48 39
27	8 58	23 16 10	-49 38
27*	9 35	23 17 11	-49 50
28	9 38	23 37 12	-49 22

The observations marked \* are of the centre of the slightly brighter part of the tail. Moonlight put a stop to any further observations. The tail was sketched each night on a map copied from Gould's *Uranometria*; it was quite straight at first, but on the 27th, 28th, and 29th a slight curvature was perceptible.

The physical appearance of the comet, its long straight tail of no greater brilliancy than the smaller Magellanic cloud, and the absence of head at once recalled to mind the comet of February 1880, and as soon as I had secured a place on January 22 I tried whether the observed place could result from the elements of that comet. I found that it could very nearly with a true anomaly of 168°·7 and perihelion passage

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January 11<sup>o</sup>, and the comet's subsequent motion is very similar to what would result from these elements.



1887, January 22, 8<sup>h</sup> 50<sup>m</sup> C.M.T.

„ 23, 9<sup>h</sup> 5<sup>m</sup> „

„ 24, 9<sup>h</sup> 15<sup>m</sup> „

„ 25, 9<sup>h</sup> 30<sup>m</sup> „

January 27, 9<sup>h</sup> 15<sup>m</sup> C.M.T.

„ 28, 9<sup>h</sup> 35<sup>m</sup> „

„ 29, 9<sup>h</sup> 15<sup>m</sup> „

From the observations on January 22, 25, and 28 I find the following orbit :

$T = \text{Jan. } 11^{\text{d}} 244, \text{ G.M.T.}$

$\pi \quad 89 \quad 41$

$\varpi \quad 359 \quad 41$

$l \quad 141 \quad 16$

$q \quad 0.0146$

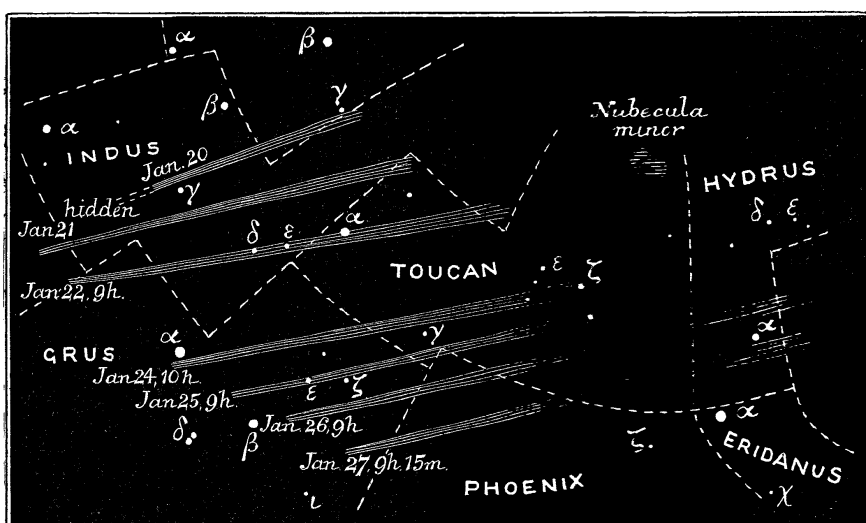
This orbit satisfies the middle place in longitude, but leaves a discordance of 4' in latitude. These elements, though of course rough, prove conclusively that the comet belongs to the family of 'Sun-grazers,' of which 1843 I., 1880 I., and 1882 II. are members.

*Royal Observatory, Cape of Good Hope:*  
1887, February 14.

*Observations of Comet 1887 a, made at the Observatory, Adelaide.*  
By Charles Todd.

(Extracts from letters to the Astronomer Royal.)

A few words about the new comet which has suddenly burst into view in the S.W. I sent you a telegram through Mr. Hesse on Friday, the 21st, which I hope you received, and I now enclose a rough sketch-map showing its positions on Jan. 20th to Jan. 27th. It was first seen on the 19th, but at the Observatory, by myself, not till the 20th, shortly before 9 P.M. The head of the comet was then hid by the mists of the horizon, but the tail passed nearly midway between  $\alpha$  *Gruis* and  $\alpha$  *Pavonis*, or over  $\gamma$  *Indi*, extending to and a little to the right of  $\gamma$  *Pavonis*.



On the 21st it was better seen and the head of the comet was close to a small star, or roughly (at 9 P.M.) R.A.  $21^{\text{h}} 5^{\text{m}}$ , Decl.  $42^{\circ} 34'$ . The tail of the comet, as measured round the horizon, had sensibly moved to the north or towards  $\alpha$  *Gruis*; it passed a little to the right of  $\gamma$  *Indi*, and to the left of  $\alpha$  and  $\delta$  *Toucani*, and could be traced a little higher in the direction of  $\beta$  *Hydri*. On the 22nd, at  $8^{\text{h}} 30^{\text{m}}$ , the position of the head of the comet was roughly R.A.  $21^{\text{h}} 20^{\text{m}} 30^{\text{s}}$ , Decl.  $44^{\circ} 17'$ . The comet has a long narrow tail of about  $30^{\circ}$ , but no well-defined nucleus, resembling, in fact, very closely in appearance the comet of Feb. 1880, which during its short season of visibility, you will remember, occupied the same part of the sky, and came into view equally suddenly. I will follow it up on every clear night and advise you again. In the meantime this will be useful in comparing with observations made elsewhere, and may, perhaps, be of some use in getting a rough orbit.